

Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of the claims in the application.

1 1. (Currently Amended) A method of scheduling operations for logical volumes in a
2 data storage system comprising:
3 determining, for a plurality of priority classes, which operations associated
4 with each of the priority classes in the plurality of priority classes have been requested for
5 a logical volume; and
6 selecting one of the operations by performing a probability-based operations
7 lookup based on the determination; and
8 wherein the probability-based operations lookup comprises using at least one
9 table configured according to predetermined probability settings.

1 2. (Currently Amended) The method of claim 1, wherein ~~the probability-based~~
2 ~~operations lookup~~ the at least one table comprises using a table of entries corresponding
3 to different operations, further comprising:
4 forming a plurality of first selection values, one corresponding to each of the
5 priority classes in the plurality of priority classes, based on the determination;
6 selecting one of the priority classes in the plurality of priority classes based on
7 the determination; and
8 selecting a corresponding one of the plurality of first selection values
9 corresponding to the selected one of the plurality of priority classes as a lookup index
10 pointing to one of the entries.

1 3. (Currently Amended) ~~The method of claim 2,~~ A method of scheduling operations for
2 logical volumes in a data storage system comprising:

3 determining, for a plurality of priority classes, which operations associated
4 with each of the priority classes in the plurality of priority classes have been requested for
5 a logical volume;

6 selecting one of the operations by performing a probability-based operations
7 lookup based on the determination;

8 wherein the probability-based operations lookup comprises using a table of
9 entries corresponding to different operations, further comprising:

10 forming a plurality of first selection values, one corresponding to each of the
11 priority classes in the plurality of priority classes, based on the determination;

12 selecting one of the priority classes in the plurality of priority classes based on
13 the determination; and

14 selecting a corresponding one of the plurality of first selection values
15 corresponding to the selected one of the plurality of priority classes as a lookup index
16 pointing to one of the entries; and

17 wherein the probability-based operations lookup comprises a first lookup level
18 corresponding to a probability-based priority class lookup and a second lookup level
19 corresponding to the probability-based operations lookup, and wherein selecting one of
20 the priority classes in the plurality of priority classes comprises:

21 deriving a second selection value from the first selection values; and

22 using the second selection value as a first lookup index at the first lookup
23 level and using the selected one of the first selection values as a second lookup index at
24 the second lookup level.

1 4. (Cancelled)

1 5. (Cancelled)

1 6. (Cancelled)

1 7. (Cancelled)

1 8. (Cancelled)

1 9. (Cancelled)

1 10. (Cancelled)

1 11. (Cancelled)

1 12. (Currently Amended) An apparatus for scheduling operations for logical volumes in
2 a data storage system, comprising:

3 a stored computer program in memory instituting the steps of

4 determining, for a plurality of priority classes, which operations associated
5 with each of the priority classes in the plurality of priority classes have been requested for
6 a logical volume;~~and~~

7 selecting one of the operations by performing a probability-based operations
8 lookup based on the determination; and

9 wherein the probability-based operations lookup comprises using at least one
10 table configured according to predetermined probability settings.

1 13. (Cancelled)

1 14. (Cancelled)

1 15. (Cancelled)

1 16. (Cancelled)

1 17. (Cancelled)

1 18. (Cancelled)

1 19. (Cancelled)

1 20. (Cancelled)

1 21. (Currently Amended) A data storage system comprising:

2 one or more storage devices;

3 a controller to control scheduling of operations for a logical volume residing
4 on at least one of the one or more storage devices; ~~and~~

5 wherein the controller is operable to determine, for a plurality of priority
6 classes, which operations associated with each of the priority classes in the plurality of
7 priority classes are pending and select one of the operations by performing a probability-
8 based operations lookup based on the determination; and

9 wherein the probability-based operations lookup comprises using at least one
10 table configured according to predetermined probability settings.

1 22. (Currently Amended) A method of scheduling requested operations for a logical volume
2 in a data storage system comprising:

3 determining which requested operations are associated with each of a plurality of
4 priority classes;

5 selecting one of the plurality of priority classes by performing a first probability-
6 based lookup; ~~and~~

7 selecting one of the requested operations for scheduling by performing a second
8 probability-based lookup, wherein the selected operation is associated with the selected
9 priority class; ~~and~~

10 wherein each of the first probability-based lookup and the second probability-based
11 lookup comprises using a table configured according to predetermined probability settings.